

An acid bath for the electrodeposition of glossy gold and gold alloy layers and a gloss additive for same

Claims:

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1. An acid bath for the electrodeposition of glossy gold and gold alloy layers, containing gold and optionally one or more alloy elements in dissolved form and also at least one organic compound as a gloss additive, characterised in that, the bath contains, as a further gloss additive, at least one compound of the general formula



(I)

in which

15 SWD  
B15 m is the number 3 or 4

R represents a straight-chain or branched or cyclic alkyl group with up to 20 carbon atoms and, in the event that m = 4, also an aryl or heteroaryl group with up to 10 carbon atoms, which may be optionally substituted once or several times with straight-chain or branched alkyl groups with 1 to 14 carbon atoms.

2. An electrodeposition bath according to Claim 1, characterised in that, it contains, as a further gloss additive, at least one compound of the formula I in which R is a straight-chain or branched alkyl group with 5 to 12 carbon atoms, preferably a branched alkyl group with 6 to 10

carbon atoms.

3. An electrodeposition bath according to Claim 1 or 2, characterised in that, it contains, as a further gloss additive, the compounds pentyl sulfonate, hexyl sulfonate, heptyl sulfonate, octyl sulfonate, nonyl sulfonate, decyl sulfonate, dodecyl sulfonate, cyclohexyl sulfonate, pentyl sulfate, hexyl sulfate, heptyl sulfate, octyl sulfate, nonyl sulfate, decyl sulfate, dodecyl sulfate, cyclohexyl sulfate or their isomers.

4. An electrodeposition bath according to Claims 1 to 3, characterised in that, it contains 0.01 to 10 g/l, preferably 0.1 to 5 g/l, of a compound of the formula I.

5. Use of compounds of the general formula



in which

$m$  is the number 3 or 4 and

$\mathbf{R}$  represents a straight-chain or branched or cyclic alkyl group with up to 20 carbon atoms and, in the event that  $m = 4$ , also an aryl or heteroaryl group with up to 10 carbon atoms, which may be optionally substituted once or several times with straight-chain or branched alkyl groups with 1 to 14 carbon atoms.

as further gloss additives in acid baths for the electrodeposition of glossy gold and gold alloy layers containing gold and optionally one or more alloy

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*Sul B1* elements in the dissolved form and also at least one organic compound as a gloss additive.

**SUB** 6. A process for the electrodeposition of glossy gold and gold alloy layers,  
characterised in that,  
deposition takes place from a bath in accordance with  
Claims 1 to 4 at a pH in the range 3 to 6, preferably  
4 to 5.

**An acid bath for the electrodeposition of glossy gold and  
gold alloy layers and a gloss additive for same**

**Abstract:**

- 5 The invention provides an acid bath for the  
electrodeposition of glossy gold and gold alloy layers and  
a gloss additive for same.

By using compounds of the formula I



10 in which

m is the number 3 or 4 and

15 R represents a straight-chain or branched or  
cyclic alkyl group with up to 20 carbon  
atoms and, in the event that m = 4, also an  
aryl or heteroaryl group with up to 10  
carbon atoms, which may be optionally  
substituted once or several times with  
straight-chain or branched alkyl groups with  
1 to 14 carbon atoms,

20 as a further gloss additive, the current density/working  
range is extended with a small negative effect when the pH  
is changed and the current efficiency and deposition  
performance is increased.